

**Amendments to the Drawings:**

The attached replacement drawing sheets makes changes to Figs. 3-9 and replaces the original sheets with Figs. 3-9.

Attachment: Replacement Sheets

**REMARKS**

Claims 1–6 are pending in this application. By this Amendment, the specification and drawings are amended to correct a typographical error. No new matter is added.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

**I. Objection to the Specification**

The Office Action objects to the specification due to informalities. As set forth above, the specification has been amended to clarify that numeral "8" now only refers to a "current collector" and the newly added numeral "18" refers to the "substrate" in Figures 3 through 9. Accordingly, reconsideration and withdrawal of the objection are respectfully requested.

**II. Objection to the Drawings**

The Office Action objects to the drawings due to informalities. The attached replacement drawing sheets amend Figures 3–9 to change reference numeral "8" to "18." As set forth above, the drawings now identify the "current collector" and the "substrate" with different numerals. Accordingly, reconsideration and withdrawal of the objection are respectfully requested.

**III. Rejection Under 35 U.S.C. §102**

The Office Action rejects claims 1–6 under 35 U.S.C. §102(b) over U.S. Patent Application Publication No. 2002/0122972 to Klitsner et al. ("Klitsner"). Applicants respectfully traverse the rejection.

Claim 1 recites:

Fuel cell comprising:

- a stack comprising a first electrode, an electrolytic membrane provided with front and rear faces, and a second electrode,
- and first and second current collectors integrated in the stack and respectively corresponding to the first and second electrodes, each current collector comprising a metallic deposit

and being provided with a plurality of transverse passages for passage of a fluid,  
cell characterized in that the first and second current collectors are respectively arranged on the front and rear faces of the electrolytic membrane, between the electrolytic membrane and the corresponding electrode.

The Office Action asserts that Klitsner discloses "a fuel cell (160) in which the electrodes include current collectors (174) that are in contact with the proton exchange material (172), and which includes pores (170), that would form transverse passages (paragraph 0052). Thus, the current collector is between the electrolytic membrane and the rest of the electrode."

The fuel cell (160), current collectors (174), proton exchange material (172), and pores (170) discussed in the Office Action are only depicted in Figure 8 of Klitsner and are only described in paragraph [0052] of Klitsner. Despite the Office Action's assertions, Figure 8 and paragraph [0052] of Klitsner do not expressly or inherently describe each and every feature of claim 1.

Klitsner indicates that the preferred embodiment of its invention shown in Figure 8 is a cross-section of a planar silicon fuel cell. Klitsner teaches in paragraph [0042] that "planar configurations comprise a proton transfer layer covering a layer comprising at least one anode and at least one cathode" (emphasis added). Thus, Klitsner teaches that in planar configurations the anodes and the cathodes are in the same layer and are covered by the proton transfer layer. There is nothing depicted in Figure 8 or discussed in paragraph [0052] of Klitsner that would indicate anything differently. Thus, Figure 8 and paragraph [0052] of Klitsner do not expressly or inherently depict or describe "first and second current collectors...respectively arranged on the front and rear faces of the electrolytic membrane." Moreover, because Figure 8 and paragraph [0052] are related to a planar configuration, they do not depict or describe "a stack comprising a first electrode, an electrolytic membrane

provided with front and rear faces, and a second electrode" as required by claim 1. Lastly, Klitsner fails to describe in paragraph [0052] or depict in Figure 8 the configuration and/or placement of the electrodes with respect to the proton exchange material and the current collector. Thus, Figure 8 and paragraph [0052] of Klitsner do not expressly or inherently depict or describe a current collector arranged "between the electrolytic membrane and the corresponding electrode."

The Office Action further asserts that paragraphs [0045] of Klitsner teaches that "the electrodes, and thus their respective current collectors, may be placed on opposite sides of the electrolytic membrane." However, paragraph [0045] describes a bipolar device, not a planar device as described in paragraph [0052] and depicted in Figure 8. Klitsner clearly indicates in the first sentence of paragraph [0045], "A bipolar device 40 suitable for use as a fuel cell, as shown in FIG. 1, comprises an electrolyte layer 46 sandwiched between an anode 42 and a cathode 44." Figure 1 and paragraph [0045] of Klitsner clearly fail to expressly or inherently depict or describe "first and second current collectors... respectively arranged on the front and rear faces of the electrolytic membrane, between the electrolytic membrane and the corresponding electrode" (emphasis added).

Applicants respectfully submit that the bipolar and planar configurations disclosed by Klitsner are two very separate and distinct embodiments of its invention. Klitsner fails to disclose any bipolar configurations that have all the features required by claim 1, and the planar configurations disclosed by Klitsner inherently cannot have all the features required by claim 1. Thus, Klitsner cannot be fairly said to expressly or inherently disclose a fuel cell in accordance with claim 1.

Applicants also ask that the Examiner considers the attached Written Opinion of the International Searching Authority. Although Applicants fully understand that the Patent Office is not bound by the determinations made in the Written Opinion, Applicants note that

this favourable Written Opinion is based upon an examination of the same claimed subject matter and the same reference (Klitsner), which the Written Opinion indicates as the closest prior art. Furthermore, the Written Opinion specifically considered paragraph [0052] and Figure 8, which were also considered and heavily relied upon by the Office Action. However, the Written Opinion comes to a different conclusion than that reached by the Office Action, in that the Written Opinion indicates that the claimed subject matter is novel and would not have been obvious from the disclosures of Klitsner.

For at least the reasons discussed above, Klitsner does not anticipate claim 1. Claims 2–6 depend from claim 1 and, thus, also are not anticipated by Klitsner. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

#### **IV. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Jeffrey R. Bousquet  
Registration No. 57,771

WPB:JRB

Attachments:

Replacement Sheets (2 sheets)  
Written Opinion of the International Searching Authority

Date: May 30, 2008

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<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
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## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

For

**PCT****Translation**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis 1)

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**PA1754WO**

FOR FURTHER ACTION

See paragraph 2 below

International application No.

**PCT/FR2004/001548**

International filing date (day/month/year)

**21.06.2004**

Priority date (day/month/year)

**01.07.2003**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**COMMISSARIAT À L'ENERGIE ATOMIQUE**

1 This opinion contains indications relating to the following items

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis 1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2 FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 60 (b)(h) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220

3 For further details, see notes to Form PCT/ISA/220

Name and mailing address of the ISA/EI\*

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No

PCT/FR2004/001548

Box No. 1

Basis of this opinion

- 1 With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item
- ☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b))
- 2 With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
- a. type of material
- ☐ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☐ in written format
- ☐ in computer readable form
- c. time of filing/furnishing
- ☐ contained in the international application as filed
- ☐ filed together with the international application in computer readable form
- ☐ furnished subsequently to this Authority for the purposes of search
- 3 ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished
- 4 Additional comments:



WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No

PCT/FR2004/001548

Box No. V	Reasoned statement under Rule 43bis(h)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
<b>1 Statement</b>			
Novelty (N)	Claims	<u>1-6</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>1-6</u>	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	<u>1-6</u>	YES
	Claims	_____	NO
<b>2 Citations and explanations:</b>			
<p>1) Reference is made to the following document:</p> <p style="margin-left: 40px;">D1: US 2002/122972 A1</p>			
<p>2) NOVELTY:</p> <p>Document D1 (paragraphs 52, 84; figs. 4-6, 8) describes:</p> <p>A fuel cell comprising:</p> <p style="margin-left: 40px;">a first stack comprising a first electrode, an electrolytic membrane with front and rear faces and a second electrode,</p> <p style="margin-left: 40px;">and first and second current collectors integrated in the stack and corresponding respectively to the first and second electrodes, each current collector comprising a metallic deposit and being provided with a number of transverse passages for a fluid.</p> <p>Consequently, the subject matter of claim 1 differs from this known fuel cell in that the first and second current collectors are respectively arranged on the front and rear faces of the electrolytic membrane, between the</p>			

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International Application No

PCT/FR2004/001548

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

electrolytic membrane and the corresponding electrode.

The subject matter of claim 1 is thus novel (PCT Article 33(2)).

### 3) INVENTIVE STEP

Document D1 is considered to be the closest prior art to the subject matter of claim 1.

The problem to be solved by the present invention can be considered to be the alternative design of a fuel cell of small size and which can be miniaturised, in particular using microtechnology manufacturing techniques.

The solution to this problem as proposed in claim 1 of the present application is considered to involve an inventive step (PCT Article 33(3)) for the following reason:

The combination of features of claim 1 is not contained in the prior art and does not emerge therefrom in an obvious manner.

4) Claims 2-6 are dependent on claim 1 and thus also satisfy, as such, the requirements of the PCT in respect of novelty and inventive step.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No

PCT/FR2004/001548

Box No. VI	Certain documents cited								
1	Certain published documents (Rule 43bis 1 and 70 10)								
	<table><thead><tr><th>Application No Patent No</th><th>Publication date (day/month/year)</th><th>Filing date (day/month/year)</th><th>Priority date (valid claim) (day/month/year)</th></tr></thead><tbody><tr><td>EP 1 434 297 A</td><td>30.06.2004</td><td>27.10.2003</td><td>29.10.2002</td></tr></tbody></table>	Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)	EP 1 434 297 A	30.06.2004	27.10.2003	29.10.2002
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EP 1 434 297 A	30.06.2004	27.10.2003	29.10.2002						
2	Non-written disclosures (Rule 43bis 1 and 70 9)								
	<table><thead><tr><th>Kind of non-written disclosure</th><th>Date of non-written disclosure (day/month/year)</th><th>Date of written disclosure referring to non-written disclosure (day/month/year)</th></tr></thead><tbody></tbody></table>	Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)					
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